

Coast Guard, DHS

§ 160.017-27

to prevent the ear from bending or tearing.

(h) *Fasteners.* Each fastening device must have a means to prevent the device from loosening.

(i) *Workmanship.* A ladder must not have splinters, burrs, sharp edges, corners, projections, or other defects that could injure a person using the ladder.

§ 160.017-15 Performance.

(a) Each chain ladder must be capable of being rolled up for storage.

(b) Each ladder when rolled up must be able to unroll freely and hang vertically.

§ 160.017-17 Strength.

(a) Each chain ladder must be designed to pass the approval tests in § 160.17-21.

(b) [Reserved]

§ 160.017-21 Approval tests.

(a) *General.* Each approval test must be conducted on a ladder of the longest length for which approval has been requested. If a ladder fails one of the tests in this section, the cause of the failure must be identified and any needed changes made. After a test failure and any design change, the failed test, and any other previously completed tests affected by the design change, must be rerun.

(b) *Visual examination.* Before starting the tests described in this section, an assembled chain ladder is examined for evidence of noncompliance with the requirements in §§ 160.017.11, 160.017-13, and 160.017-15.

(c) The following approval tests must be conducted:

(1) *Strength test #1.* An assembled ladder is supported so that a static load, if placed on any of its steps, would exert a force both on the step and each suspension member. A static load of 315 kg (700 lb.) is then placed on one step for at least one minute. The load must be uniformly distributed over a contact surface that is approximately 100 mm (4 in.) wide. The center of the contact surface must be at the center of the step. This test is performed on six different steps. No step may break, crack, or incur any deformation that remains after the static load is removed. No attachment between any step and a sus-

pension member may loosen or break during this test.

(2) *Strength test #2.* A ladder is suspended vertically to its full length from its top lashing rings. A static load of 900 kg (2000 lbs.) is then applied to the bottom lashing rings so that it is distributed equally between the suspension members. The suspension members, lashing rings, and spacer ears must not break, incur any elongation or deformation that remains after the test load is removed, or be damaged in any other way during this test.

(3) *Strength test #3.* A rolled-up ladder is attached by its top lashing rings to anchoring fixtures in a location away from any wall or structure that would prevent it from falling freely, and where it can hang to its full length vertically. The ladder when dropped must unroll freely. When unrolling the ladder, its steps and attachments must not become cracked, broken, or loosened. Other similar damage making the ladder unsafe to use must likewise not occur.

§ 160.017-25 Marking.

(a) Each chain ladder step manufactured under Coast Guard approval must be branded or otherwise permanently and legibly marked on the bottom with—

- (1) The name of the manufacturer;
- (2) The manufacturer's brand or model designation;
- (3) The lot number and date of manufacture; and
- (4) The Coast Guard approval number.

(b) [Reserved]

§ 160.017-27 Production tests and examination.

(a) *General.* Each ladder manufactured under Coast Guard approval must be tested in accordance with this section and subpart 159.007 of this chapter. Steps that fail testing may not be marked with the Coast Guard approval number and each assembled ladder that fails testing may not be sold as Coast Guard approved.

(b) *Test #1: Steps.* Steps must be separated into lots of 100 steps or less. One step from each lot must be selected at random and tested as described in

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§ 106.017-21(c)(1), except that the step may be supported at the points where it would be attached to suspension members in an assembled ladder. If the step fails the test, ten more steps must be selected at random from the lot and tested. If one or more of the ten steps fails the test, each step in the lot must be tested.

(c) *Test #2: Ladders.* Assembled ladders must be separated into lots of 20 ladders or less. One ladder must be selected at random from the ladders in the lot. The ladder selected must be at least 3 m (10 ft.) long or, if each ladder in the lot is less than 3 m long, a ladder of the longest length in the lot must be selected. The ladder must be tested as prescribed in § 160.017-21(c)(2), except that only a 3 m section of the ladder need be subjected to the static load. If the ladder fails the test each other ladder in the lot must be tested.

(d) *Independent laboratory.* Each production test must be conducted or supervised by an independent laboratory. However, if a test is performed more than 4 different times per year, laboratory participation is required only 4 times per year. If the laboratory does not participate in all tests, the times of laboratory participation must be as selected by the laboratory. The times selected must provide for effective monitoring throughout the production schedule.

(e) *Visual examination.* The visual examination described in § 160.017-21(b) must be conducted as a part of each production test.

Subpart 160.021—Hand Red Flare Distress Signals

SOURCE: CGD 76-048a and 76-048b, 44 FR 73060, Dec. 17, 1979, unless otherwise noted.

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§ 160.021-1 Incorporation by reference.

(a) The following is incorporated by reference into this subpart:

(1) “The Universal Color Language” and “The Color Names Dictionary” in *Color: Universal Language and Dictionary of Names*, National Bureau of Standards Special Publication 440, December 1976.

(b) NBS Special Publication 440 may be obtained by ordering from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (Order by SD Catalog No. C13.10:440).

(c) Approval to incorporate by reference the publication listed in this section was obtained from the Director of the Federal Register on November 1, 1979. The publication is on file at the Federal Register Library.

§ 160.021-2 Type.

(a) Hand red flare distress signals specified by this subpart shall be of one type which shall consist essentially of a wooden handle to which is attached a tubular casing having a sealing plug at the handle end, the casing being filled with a flare composition and having a button of ignition material at the top, with a removable cap having a friction striking material on its top which may be exposed for use by pulling a tear strip. The flare is ignited by scraping the friction striker on top of the cap against the igniter button on top of the flare. The general arrangement of the flare is shown by Figure No. 160.021-2(a). Alternate arrangements which conform to all the performance requirements of this specification (and other arrangements which conform with all performance requirements except candlepower and burning time, but provide not less than 3,000 candela-minutes with a minimum of 1/3 minute burning time) will be given special consideration.